

MDC 4 Getting Started

Introduction

The Monitoring Data Checking Software is a tool developed by EPA's Clean Air Markets Division to allow regulated industry and State agencies to enter, analyze and print electronic monitoring plan, certification and quality assurance data and to evaluate hourly emissions data for the OTC NO_x Budget Program, the Acid Rain Program and monitoring under Subpart H. The software also allows regulated industry to submit Monitoring plan and certification data to EPA via ftp.

MDC performs the following tasks:

1. Imports monitoring plan data (RTs 500+), QA test data (RT 600+) and extension/exemption records (RTs 695-699) from EDR v1.3, 2.0, 2.1 or 2.2 files. Produces import report if any errors were found that resulted in data rejection or modification for storage in MDC database.
2. Allows entry of data directly into data entry screens for MP, QA test and extension/exemption records and also compliance certification records (RTs 900+).
3. Evaluates monitoring plans, quality assurance tests and extension/exemption records.
4. Compares monitoring plan records between two EDR files or between MDC data and an EDR file.
5. Prints out reports of data or evaluations.
6. Exports MP, QA, extension/exemption and RT 900+ data to EDR v2.2 files.
7. Creates LME quarterly reports.
8. MDC Hourly Module:
 - a. Imports hourly data from EDR file(s) into temporary database. Analyzes, views and charts the hourly emissions data for SO₂, CO₂, O₂, NO_x and heat input. Also calculates and displays summary data for daily, monthly and quarterly time periods.
 - b. Checks hourly emissions calculations. Relies on the monitoring plan and RATA test data in MDC for these calculations. Calculates cumulative emissions to compare to values reported in RTs 301 and 307.
 - c. Checks to determine the quality assurance status (with respect to RATAs and Linearities) of measurements reported for specific hours and monitors. Uses the ongoing quality assurance test data and extension/exemption records contained in MDC for this analysis.
 - d. Archives hourly data calculations and QA status for quick retrieval.
 - e. Provides utility to modify parameter tolerances for comparisons of reported versus calculated hourly emissions.
9. MDC-FTP allows submission of monitoring plan data and cert/recert test data directly to EPA's servers using the Internet and FTP protocols. Prior to exporting and submitting the data to EPA, MDC performs checks and informs user if critical errors.

For more detailed information on the use of the software and the criteria applied to the data during the import and evaluation process see the helpfile distributed with and accessed through the software.

The installation software is available to download on EPA's Clean Air Markets web site (www.epa.gov/airmarkets/monitoring/mdc/index.html). It can be installed under Windows 95/98 (or higher), Windows NT, or Windows 2000. For more detailed information on the operational requirements and the installation of the software, consult the Installation Instructions available at the above-referred web page.

The software provides a standard Windows-based, mouse-driven, point and click user interface. It is network-ready and can be used simultaneously by more than one user.

User Access

The software is distributed with a default User Name of "USER" and a blank password. Use this name and password when you enter the software for the first time. Go to the Utilities submenu and add a user, user password (if desired) and identify the printer to which reports will be sent from this software. If you do not identify the correct printer, you may be unable to print acceptable outputs. For detailed information, see the helpfile.

Main Menu

To access the various functions within the system, explore the drop down menus from each option on the Main Menu bar. The File option accesses the EDR Import and Export options, the MDC-FTP Utility, and backup and restore utilities. The Edit option accesses the Monitoring Plan, Certification Test Data Entry, Test Extension and Compliance Certification screens. The Reports option accesses the monitoring plan evaluation report, a printout of monitoring plan data and a series of reports relating to certification test and quality assurance data and test extensions. The Utilities option accesses the Delete facilities option and various system utilities which support user IDs, Printers and look-up tables. The Windows option allows you to toggle between open windows. The Help option provides access to detailed help information on the operation of the software and functional requirements of the evaluation checks.

Selecting from the Browse Lists

If the user selects a menu option for specific facilities, the software displays a browse screen that allows the user to view and select from a list of facilities for which data has been imported or entered.

To select one facility from the Facility Window, highlight the facility and double click.

To select more than one facility, right click on each facility. To deselect a selected facility, right click on the facility again. Double click to initiate the action.

Close Button: Closes the window and returns to the prior screen or menu.

Sort Capability: To sort the list by a specific type of information, double click on the column heading for the desired information. The current sort column is indicated in the column heading with an (x).

Column Width Control: You can temporarily reorder or change the width of any column by clicking on the column border and dragging it to the right or left.

Filter Option: You can filter or limit the items on the list, where appropriate, by defining your selection criteria using the Filter Button.

Importing Data

This option imports ASCII files containing monitoring plan data in either EDR Version 1.3, 2.0, 2.1 or 2.2 formats. To import a file, select the file or provide the filename and location from the standard windows File Open utility which will appear on your screen.

Processing Steps:

1. The software first checks the file to ensure that it contains only ASCII characters and is formatted according to the RTs defined by EPA. If the software identifies non-ASCII characters or other format problem, the processing is stopped and the entire file rejected. You must return to the main menu and correct the error before continuing.
2. The user must select certification/QA test import or monitoring plan data import.
3. The software then checks to determine whether the file contains unit or stack data from a facility which is currently stored in the system databases. If so, you are warned and must choose to either stop the import process, delete the existing data prior to import, or update the existing data by importing the new data.
4. For EDR v1.3 certification/QA test data, the software assigns test numbers. For three load-flow tests or multiple tests for the same system, the user must review and confirm the test numbers assigned by the software.
5. The software then evaluates each line for critical errors that prevent storing the data in the underlying database. Where format errors such as improperly formatted date or numeric information prevents the software from interpreting the data, an error message is generated. For a detailed list of the import criteria and resulting error messages, see the helpfile distributed with this application. At the end of the process an Import Report is displayed in the Print Preview window. The import process stores the data in relational databases consistent with EDR Version 2.0/2.1/2.2 requirements.

Printing the Monitoring Plan and Certification/QA Test Data

Select this option from the Reports menu to print the monitoring plan and tests data for one or more selected facilities. You may view or print the resulting report.

Evaluating the Monitoring Plan and Certification/QA Test Data

Select the appropriate option from the Reports menu to evaluate the stored data for a facility and generate a report of errors detected by the software. You may select more than one facility to evaluate by clicking with the right mouse button on each one. Double click on the left mouse key to generate the reports. For monitoring plan data evaluation, you will be prompted to identify the EDR Quarter and Year relevant to the evaluation. If the evaluation is performed prior to submission of an initial monitoring plan or certification application, accept the default values. The software then generates reports for each selected facility. All reports will be displayed in the Print Preview window.

For a detailed list of the evaluation criteria and resulting error messages, consult the helpfile distributed with the software. Note the following points when interpreting the evaluation results:

- For checks of monitoring plan time-related records (such as span, methodology, etc.), MDC uses the specified evaluation quarter and year to determine which records are active and should be included in the evaluation. Records that were "deactivated" prior to the first day or activated after the last day of the evaluation quarter and year will not be checked.
- Certain types of errors (especially import errors which reject duplicate or invalid records) prevent other checks from being performed on the original data. After you have corrected the problems identified by the import and evaluation error reports, additional problems may be identified by the software when you re-run the evaluations.

Entering or Editing Data

To enter monitoring plan data for a new facility, click on the Add button on the Facility browse list. To enter or edit data for a facility already present in the database, highlight the facility. Double click or select the specific data entry area to access by clicking one of the following buttons:

Facility: To enter RT 102

Units: To enter RTs 504, 505, 506, 507, 585, 586 or 587

Stacks: To enter RT 503

Monitoring: To enter RTs 508, 510, 520, 530, 531, 535, 536, 540, 550, 556 or 560

You may evaluate the monitoring plan data for a specific unit or stack, by clicking on the Evaluate button from the Units, Stacks, or Monitoring screens.

To enter certification or quality assurance test data for a system, select the facility, unit and system from a series of browse screens. To add a test, click on the Add button and select the type of test to be added. To edit data for a test already present, highlight the test and double click. You may evaluate the test data by clicking on the Evaluate button at any time. Where appropriate, the test data screens also allow you to calculate the test results and use these results to populate the database.

Fields on the data entry screens for each record type generally appear in the same order as the EDR. Where the EDR limits entries to defined codes or values, these values are made available to you as look-up codes for each field. When you exit from each data entry screen, the software checks the data from the screen for completeness and internal consistency and displays error messages, if appropriate. Each data entry screen is linked through the F1 key and Help Button (and general help system) to Record Type specific help, based on the EDR instructions.

Exporting Data

To export a file, select one or more facilities from the Facility Selection Window. You may also select a particular unit or stack to export. Identify the quarter and year for which the data should be exported and the type of data to be exported. If the data is exported for submission as an initial monitoring plan or as part of a certification application, accept the default value which is based on the current date. Wait for the software to process the data into EDR Version 2.2 ASCII format. Provide a filename and location to save the exported file using a standard File Save Window.

MDC Hourly

See the separate MDC Hourly Getting Started document available with the software installation files at <http://www.epa.gov/airmarkets/monitoring/mdc/index.html>. This document is also accessible through the MDC Hourly helpfile.

MDC-FTP

See the separate MDC-FTP Getting Started document available with the software installation files at <http://www.epa.gov/airmarkets/monitoring/mdc/index.html>. This document is also accessible through the MDC 4.1 helpfile.

Questions or Assistance

If you have technical questions about the installation or use of the software, contact Perrin Quarles Associates, Inc., Charlottesville, Virginia, 434-979-3700, email mdc@pqa.com. If you have air pollution program implementation related questions about the software, contact Kim Nguyen, U.S. EPA, Clean Air Markets Division, 202-564-9102, email nguyen.kim@epa.gov.